

ABSTRACT OF THE DISCLOSURE

1 In a ring topology network, a number of nodes interconnect
2 transmission links to form first and second working rings and first and
3 second optical protection rings in a ring topology. Multiple working paths
4 are established on each working ring and multiple protection paths are
5 established on each protection ring corresponding to the working paths. A
6 first working path spans across first and second nodes for transmission of a
7 signal in a first direction of the ring topology, and a second working path of
8 the second working ring spans across the first and second nodes for
9 transmission of a signal in a second direction of the ring topology opposite
10 to the first direction. A first protection path on the first protection ring
11 spans across the first and second nodes for transmission of a signal in the
12 second direction of the ring topology, and a second protection path of the
13 second protection ring spans across the first and second nodes for
14 transmission of a signal in the first direction of the ring topology. The first
15 and second nodes normally use the first and second working paths,
16 respectively. Responsive to a failure of one of the first and second working
17 paths, the first and second nodes use a corresponding one of the first and
18 second protection paths, instead of the failed working path.